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SARDIS LAKE, LAFAYETTE AND PANOLA COUNTIES, MISSISSIPPI

PACIFIC NORTHWEST ENVIRONMENTAL RESEARCH LABORATORY

PREPARED FOR
NATIONAL ENVIRONMENTAL RESEARCH CENTER

JUNE 1975

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16. ABSTRACT

Annual total phosphorus and total nitrogen loadings to the lake were estimated and subdivided according to either point or non-point source origin. An assessment of the lake's trophic condition and limiting nutrient is also provided. All data collected by the U.S.E.P.A. National Eutrophication Survey during the one year study of the lake and its tributaries are included in the report.

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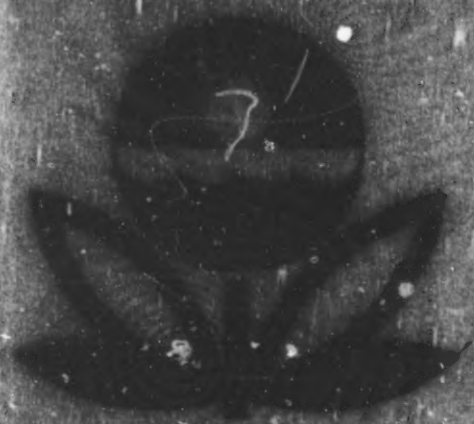

REPORT

ON

SARDIS LAKE

LAFAYETTE AND PANOLA COUNTIES

MISSISSIPPI

EPA REGION IV

WORKING PAPER No. 363

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WITH THE COOPERATION OF THE

MISSISSIPPI AIR AND WATER POLLUTION

CONTROL COMMISSION

AND THE

MISSISSIPPI NATIONAL GUARD

JUNE, 1975

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FOREWORD

The National Eutrophication Survey was initiated in 1972 in response to an Administration commitment to investigate the nationwide threat of accelerated eutrophication to fresh water lakes and reservoirs.

OBJECTIVES

The Survey was designed to develop, in conjunction with state environmental agencies, information on nutrient sources, concentrations, and impact on selected freshwater lakes as a basis for formulating comprehensive and coordinated national, regional, and state management practices relating to point-source discharge reduction and non-point source pollution abatement in lake watersheds.

ANALYTIC APPROACH

The mathematical and statistical procedures selected for the Survey's eutrophication analysis are based on related concepts that:

a. A generalized representation or model relating sources, concentrations, and impacts can be constructed.

b. By applying measurements of relevant parameters associated with lake degradation, the generalized model can be transformed into an operational representation of a lake, its drainage basin, and related nutrients.

c. With such a transformation, an assessment of the potential for eutrophication control can be made.

LAKE ANALYSIS

In this report, the first stage of evaluation of lake and watershed data collected from the study lake and its drainage basin is documented. The report is formatted to provide state environmental agencies with specific information for basin planning [§303(e)], water quality criteria/standards review [§303(c)], clean lakes [§314(a,b)], and water quality monitoring [§106 and §305(b)] activities mandated by the Federal Water Pollution Control Act Amendments of 1972.

Beyond the single lake analysis, broader based correlations between nutrient concentrations (and loading) and trophic condition are being made to advance the rationale and data base for refinement of nutrient water quality criteria for the Nation's fresh water lakes. Likewise, multivariate evaluations for the relationships between land use, nutrient export, and trophic condition, by lake class or use, are being developed to assist in the formulation of planning guidelines and policies by EPA and to augment plans implementation by the states.

ACKNOWLEDGMENT

The staff of the National Eutrophication Survey (Office of Research & Development, U. S. Environmental Protection Agency) expresses sincere appreciation to the Mississippi Air and Water Pollution Control Commission for professional involvement and to the Mississippi National Guard for conducting the tributary sampling phase of the Survey.

Glen Wood, Jr., Director, and John Smith, Deputy Director of the Air and Water Pollution Control Commission; and John Harper, Don Scott, John Sigman, and Dwight Wylie of the Water Division provided invaluable lake documentation and counsel during the Survey, reviewed the preliminary reports, and provided critiques most useful in the preparation of this Working Paper series.

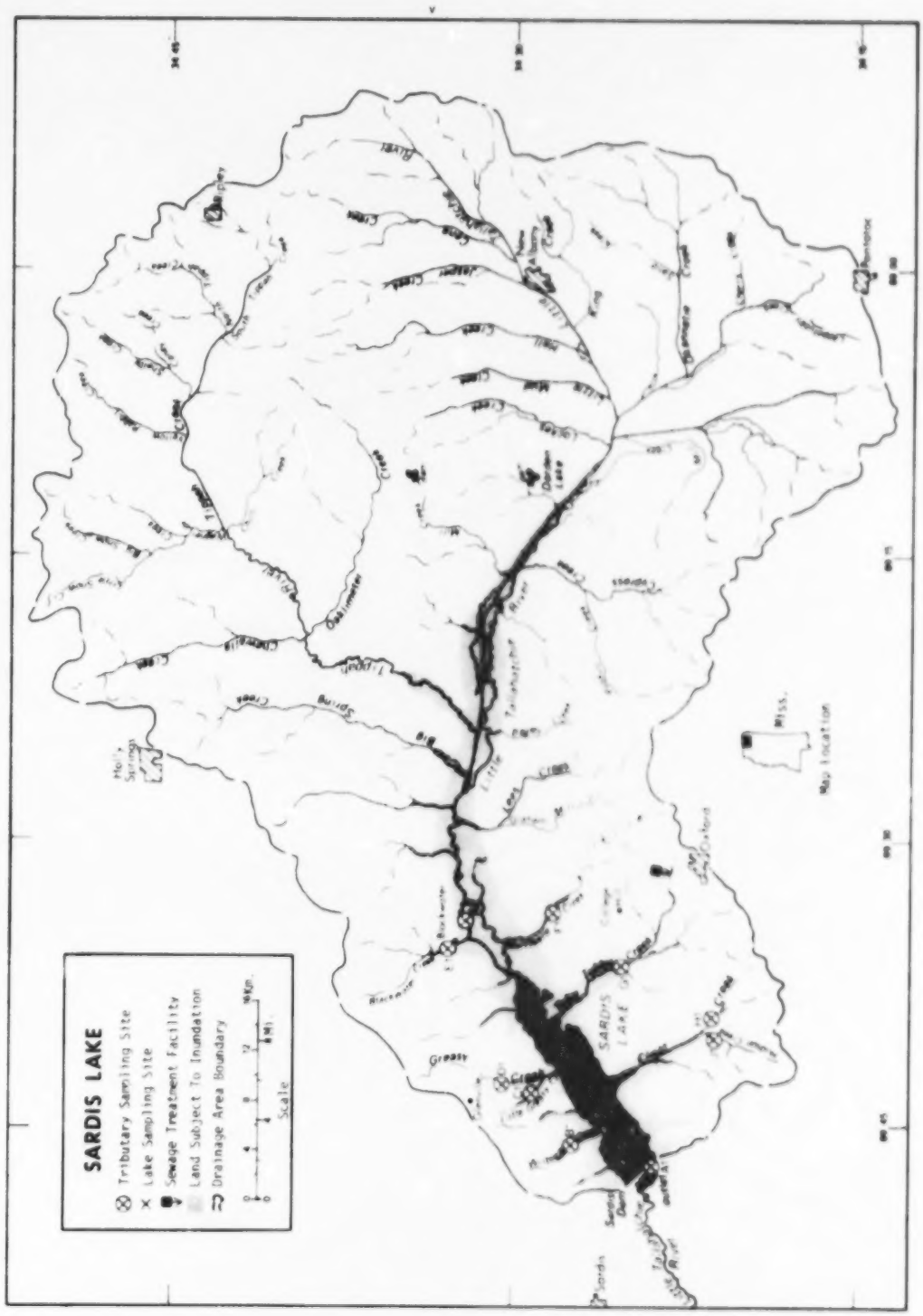
Major General E. A. Beby Turnage, the Adjutant General of Mississippi, and Project Officer Major Thomas D. Nichols, who directed the volunteer efforts of the Mississippi National Guardsmen, are also gratefully acknowledged for their assistance to the Survey.

NATIONAL EUTROPHICATION SURVEY

STUDY LAKES

STATE OF MISSISSIPPI

LAKE NAME	COUNTY
Arkabutla	DeSoto, Tate
Enid	Yalobusha
Grenada	Calhoun, Grenada, Yalobusha
Pickwick	Tishominga
Ross Barnett	Jackson, Madison, Rankin
Sardis	Lafayette, Panola


SARDIS LAKE
Tributary Sampling Site
Lake Sampling Site
Sewage Treatment Facility
Land Subject To Inundation
Drainage Area Boundary
Scale
Miss.
Map Location
SARDIS LAKE
Grassy
Hollywood
Spring Creek
Little Tallahatchie River
Tallahatchie River
Sardis Dam
Florida

SARDIS LAKE

STORET NO. 2805

I. CONCLUSIONS

A. Trophic Condition:

Survey data indicate that Sardis Lake is eutrophic, although it ranked first in overall trophic quality when the five Mississippi lakes sampled in 1973 were compared using a combination of six parameters*. None of the other lakes had less median total phosphorus, one had less and one had the same median dissolved phosphorus, one had less median inorganic nitrogen, one had less mean chlorophyll a, and none had greater mean Secchi disc transparency. Depression of dissolved oxygen with depth occurred at all four sampling stations in June and August.

B. Rate-Limiting Nutrient:

There was a significant change in nutrient levels during shipment of the assay sample and the results are not representative of conditions in the lake at the time the sample was taken (06/13/73).

The lake data indicate phosphorus limitation at all sampling times.

C. Nutrient Controllability:

1. Point sources--The only known point source impacting Sardis Lake during the sampling year was the town of Oxford

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* See Appendix A.

which contributed 3.2% of the total phosphorus load. Even with complete removal of phosphorus at Oxford, the loading would still be nearly 1½ times that proposed by Vollenweider (Vollenweider and Dillon, 1974) as a eutrophic loading (see page 13). However, since Sardis Lake is phosphorus limited, any reduction in phosphorus loading would be expected to improve the trophic condition of the lake.

2. Non-point sources--During the sampling year, the Little Tallahatchie River contributed 86.1% of the total phosphorus load; Clear Creek, 2.5%; Toby Tubby Creek, 1.2%; Hurricane Creek, 0.9%; and the remaining four streams collectively contributed 1.4% of the load. The ungaged drainage areas were estimated to have contributed 3.1% of the load.

The mean of the phosphorus export rates of the Sardis Lake tributaries was only 18 kg/km^2/year (see page 12). This is the lowest mean export rate of the five lake drainages sampled in Mississippi. For example, the mean phosphorus export rate of the tributaries of nearby Arkabutla Reservoir* was 52 kg/km^2/year (range of 32 to 77 kg/km^2/year).

* Working Paper No. 359.

II. LAKE AND DRAINAGE BASIN CHARACTERISTICS†

A. Lake Morphometry††:

1. Surface area: 125.46 kilometers^2.
2. Mean depth: 16.5 meters.
3. Maximum depth: 23.3 meters.
4. Volume: 2,070.090 x 10^6 m^3.
5. Mean hydraulic retention time: 1.1 years (based on outflow).

B. Tributary and Outlet:
(See Appendix C for flow data)

1. Tributaries -

Name	Drainage area (km^2)*	Mean flow (m^3/sec)*
Little Tallahatchie River	3,162.4	52.2
Little Greasy Creek	11.9	0.1
Greasy Creek	51.0	0.5
Blackwater Creek	78.0	1.1
Hurricane Creek	72.0	0.9
Toby Tubby Creek	131.6	1.2
Clear Creek	109.8	1.6
Hudson Creek	24.5	0.2
Minor tributaries & immediate drainage -	234.8	4.9
Totals	3,876.0	62.7

2. Outlet -

Little Tallahatchie River	4,001.5**	61.6

C. Precipitation***:

1. Year of sampling: 199.3 centimeters.
2. Mean annual: 135.0 centimeters.

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† Table of metric conversions--Appendix B.
†† Smith, 1973.
* For limits of accuracy, see Working Paper No. 175, "...Survey Methods, 1973-1976".
** Includes area of lake.
*** See Working Paper No. 175.

III. LAKE WATER QUALITY SUMMARY

Sardis Lake was sampled three times during the open-water season of 1973 by means of a pontoon-equipped Huey helicopter. Each time, samples for physical and chemical parameters were collected from four stations on the lake and from a number of depths at each station (see map, page v). During each visit, a single depth-integrated (4.6 m to surface) sample was composited from the stations for phytoplankton identification and enumeration; and during the first visit, a single 18.9-liter depth-integrated sample was composited for algal assays. Also each time, a depth-integrated sample was collected from each of the stations for chlorophyll a analysis. The maximum depths sampled were 16.8 meters at station 1, 14.6 meters at station 2, 14.0 meters at station 3, and 13.4 meters at station 4.

The sampling results are presented in full in Appendix D and are summarized in the following table.

A. SUMMARY OF PHYSICAL AND CHEMICAL CHARACTERISTICS FOR SARDIS LAKE
STORET CODE 2805

PARAMETER	1ST SAMPLING (6/13/73) 4 SITES RANGE	MEAN	MEDIAN	2ND SAMPLING (8/27/73) 4 SITES RANGE	MEAN	MEDIAN	3RD SAMPLING (11/ 1/73) 4 SITES RANGE	MEAN	MEDIAN
TEMP (C)	16.4 - 29.4	22.5	23.4	18.1 - 30.3	25.6	28.0	17.7 - 18.9	18.5	18.5
DISS OXY (MG/L)	1.2 - 7.4	4.5	4.0	0.2 - 7.8	3.1	1.8	6.2 - 8.4	7.3	7.5
CNDCTVY (MCROMO)	50. - 62.	54.	54.	62. - 80.	69.	67.	58. - 64.	61.	61.
PH (STAND UNITS)	7.0 - 8.5	7.6	7.6	6.0 - 6.8	6.4	6.4	7.5 - 8.3	8.0	7.9
TOT ALK (MG/L)	13. - 24.	16.	15.	14. - 28.	21.	21.	21. - 29.	24.	23.
TOT P (MG/L)	0.003 - 0.090	0.069	0.070	0.014 - 0.064	0.030	0.019	0.019 - 0.049	0.029	0.027
ORTHO P (MG/L)	0.004 - 0.075	0.012	0.009	0.004 - 0.018	0.009	0.008	0.007 - 0.013	0.009	0.008
NO2+NO3 (MG/L)	0.070 - 0.340	0.212	0.210	0.020 - 0.110	0.060	0.050	0.030 - 0.040	0.037	0.040
AMMONIA (MG/L)	0.070 - 0.150	0.111	0.120	0.020 - 0.380	0.131	0.060	0.050 - 0.150	0.104	0.115
KJEL N (MG/L)	0.300 - 0.600	0.405	0.400	0.400 - 0.800	0.606	0.600	0.280 - 0.500	0.319	0.300
INORG N (MG/L)	0.140 - 0.480	0.324	0.320	0.050 - 0.410	0.191	0.105	0.080 - 0.190	0.142	0.155
TOTAL N (MG/L)	0.510 - 0.750	0.617	0.610	0.420 - 0.910	0.666	0.680	0.230 - 0.540	0.356	0.340
CHLRPYL A (UG/L)	7.0 - 12.7	9.4	8.9	4.2 - 6.3	4.9	4.6	1.9 - 11.6	4.9	3.1
SECCHI (METERS)	0.5 - 0.5	0.5	0.5	2.0 - 2.3	2.2	2.2	1.0 - 1.7	1.3	1.3

B. Biological characteristics:

1. Phytoplankton -

Sampling Date	Dominant Genera	Algal Units per ml
06/13/73	1. *Melosira sp.*	3,060
	2. Flagellates	205
	3. *Stephanodiscus sp.*	43
	4. *Cryptomonas sp.*	29
	5. *Synedra sp.*	15
	Other genera	15
	Total	3,367
08/27/73	1. *Lyngbya sp.*	1,289
	2. *Cryptomonas sp.*	182
	3. *Melosira sp.*	161
	4. *Synedra sp.*	40
	5. *Mallomonas sp.*	40
	Total	1,712
11/01/73	1. Flagellates	1,699
	2. *Melosira sp.*	292
	3. *Cyclotella sp.*	154
	4. *Cryptomonas sp.*	120
	5. *Synedra sp.*	86
	Other genera	103
	Total	2,454

2. Chlorophyll *a* -

Sampling Date	Station Number	Chlorophyll *a* (µg/l)
06/13/73	01	7.0
	02	12.7
	03	7.5
	04	10.4
08/27/73	01	6.3
	02	4.2
	03	4.2
	04	5.0
11/01/73	01	1.9
	02	2.9
	03	3.4
	04	11.6

C. Limiting Nutrient Study:

There was a significant change in nutrients during shipment of the sample, and the assay results are not representative of conditions in the lake at the time the sample was collected.

The lake data indicate phosphorus limitation; i.e., the mean inorganic nitrogen/orthophosphorus ratios were 14/1 or greater at all sampling stations and times, with the single exception of station 4 (nearest the nutrient point source) where the mean N/P ratio was 8/1 in November.

IV. NUTRIENT LOADINGS
(See Appendix E for data)

For the determination of nutrient loadings, the Mississippi National Guard collected intermittent monthly near-surface grab samples from each of the tributary sites indicated on the map (page v). Sampling was begun in August, 1973, was completed in May, 1974, and was interrupted twice during the year due to severe flooding.

Through an interagency agreement, stream flow estimates for the year of sampling and a "normalized" or average year were provided by the Mississippi District Office of the U.S. Geological Survey for the tributary sites nearest the lake.

In this report, nutrient loads for sampled tributaries were determined by using a modification of a U.S. Geological Survey computer program for calculating stream loadings*. Note that Wilborn Creek (B-1) was not sampled because of inaccessibility; the drainage area and flow of this stream are included in the "ZZ" area and flow. Nutrient loads shown are those measured minus point-source loads, if any.

Nutrient loads for unsampled "minor tributaries and immediate drainage" ("ZZ" of U.S.G.S.) were estimated using the means of the nutrient loads, in $kg/km^2/year$, at stations A-2, C-1, D-1, E-1, F-1, H-1, and J-1 and multiplying the means by the ZZ area in km^2.

The operator of the Oxford wastewater treatment plant provided monthly effluent samples but only limited flow data; therefore, nutri-

* See Working Paper No. 175.

ent loads were estimated at 1.134 kg P and 3.401 kg N/capita/year, and flows were estimated at 0.3875 m^3/capita/day.

A. Waste Sources:

1. Known municipal* -

Name	Pop. Served	Treatment	Mean Flow (m^3/d)	Receiving Water
Oxford	4,000	trickling filter	1,514.0	Toby Tubby Creek

2. Known industrial - None

* Murphy, 1973.

B. Annual Total Phosphorus Loading - Average Year:

1. Inputs -

Source	kg P/ yr	% of total
a. Tributaries (non-point load) -		
Little Tallahatchie River	120,660	86.1
Little Greasy Creek	65	<0.1
Greasy Creek	355	0.3
Blackwater Creek	1,150	0.8
Hurricane Creek	1,290	0.9
Toby Tubby Creek	1,670	1.2
Clear Creek	3,480	2.5
Hudson Creek	350	0.2
b. Minor tributaries & immediate drainage (non-point load) -	4,325	3.1
c. Known municipal STP's -		
Oxford	4,535	3.2
d. Septic tanks - Unknown	?	-
e. Known industrial - None	-	-
f. Direct precipitation* -	2,195	1.6
Total	140,075	100.0

2. Outputs -

Lake outlet - Little Tallahatchie River	115,755

3. Net annual P accumulation - 24,320 kg.

* See Working Paper No. 175.

C. Annual Total Nitrogen Loading - Average Year:

1. Inputs -

Source	kg N/yr	% of total
a. Tributaries (non-point load) -		
Little Tallahatchie River	1,329,855	74.4
Little Greasy Creek	1,820	0.1
Greasy Creek	15,000	0.8
Blackwater Creek	35,700	2.0
Hurricane Creek	47,510	2.7
Toby Tubby Creek	40,850	2.3
Clear Creek	62,215	3.5
Hudson Creek	7,660	0.4
b. Minor tributaries & immediate drainage (non-point load) -	96,100	5.4
c. Known municipal STP's -		
Oxford	13,605	0.8
d. Septic tanks - Unknown	?	-
e. Known industrial - None	-	-
f. Direct precipitation* -	135,445	7.6
Total	1,785,760	100.0

2. Outputs -

Lake outlet - Little Tallahatchie River	2,243,215

3. Net annual N loss - 457,455 kg.

* See Working Paper No. 175.

D. Mean Annual Non-point Nutrient Export by Subdrainage Area:

Tributary	kg P/km^2/yr	kg N/km^2/yr
Little Tallahatchie River	38	420
Little Greasy Creek	5	153
Greasy Creek	7	294
Blackwater Creek	15	458
Hurricane Creek	18	660
Toby Tubby Creek	13	310
Clear Creek	32	567
Hudson Creek	14	313

E. Yearly Loads:

In the following table, the existing phosphorus loadings are compared to those proposed by Vollenweider (Vollenweider and Dillon, 1974). Essentially, his "dangerous" loading is one at which the receiving water would become eutrophic or remain eutrophic; his "permissible" loading is that which would result in the receiving water remaining oligotrophic or becoming oligotrophic if morphometry permitted. A mesotrophic loading would be considered one between "dangerous" and "permissible".

Note that Vollenweider's model may not be applicable to water bodies with short hydraulic retention times.

	Total Phosphorus		Total Nitrogen	
	Total	Accumulated	Total	Accumulated
grams/m^2/yr	1.12	0.19	14.2	loss*

Vollenweider phosphorus loadings ($g/m^2/yr$) based on mean depth and mean hydraulic retention time of Sardis Lake:	
"Dangerous" (eutrophic loading)	0.74
"Permissible" (oligotrophic loading)	0.37

* There was an apparent loss of nitrogen during the sampling year. This may have been due to nitrogen fixation in the lake, solubilization of previously sedimented nitrogen, recharge with nitrogen-rich ground water, unknown and unsampled point sources discharging directly to the lake, or insufficient outlet sampling. Whatever the cause, a similar nitrogen loss has occurred at Shagawa Lake, Minnesota, which has been intensively studied by EPA's former National Eutrophication and Lake Restoration Branch (Malueg et al., 1975).

V. LITERATURE REVIEWED

Malueg, Kenneth W., D. Phillips Larsen, Donald W. Schults, and Howard T. Mercier; 1975. A six-year water, phosphorus, and nitrogen budget for Shagawa Lake, Minnesota. Jour. Environ. Qual., vol. 4, no. 2, pp. 236-242.

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VI. APPENDICES

APPENDIX A

LAKE RANKINGS

LAKE DATA TO BE USED IN RANKINGS

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	500-MEAN SEC	MEAN CHLORA	15-MIN DO	MEDIAN DISS ORTHO P
2801	ARKABUTLA LAKE	0.198	0.440	485.111	6.500	15.000	0.025
2802	ENID LAKE	0.062	0.240	465.000	6.578	14.900	0.009
2804	ROSS BARNETT RESERVOIR	0.045	0.140	462.917	9.992	14.600	0.008
2805	SARDIS LAKE	0.041	0.190	447.750	6.425	14.800	0.009
2806	GRENADA LAKE	0.051	0.305	476.778	6.022	14.900	0.010

PERCENT OF LAKES WITH HIGHER VALUES (NUMBER OF LAKES WITH HIGHER VALUES)

LAKE CODE	LAKE NAME	MEDIAN TOTAL P	MEDIAN INORG N	500-MEAN SEC	MEAN CHLORA	15-MIN DO	MEDIAN DISS ORTHO P	INDEX NO
2801	ARKABUTLA LAKE	0 (0)	0 (0)	0 (0)	50 (2)	0 (0)	0 (0)	50
2802	ENID LAKE	25 (1)	50 (2)	50 (2)	25 (1)	38 (1)	63 (2)	251
2804	ROSS BARNETT RESERVOIR	75 (3)	100 (4)	75 (3)	0 (0)	100 (4)	100 (4)	450
2805	SARDIS LAKE	100 (4)	75 (3)	100 (4)	75 (3)	75 (3)	63 (2)	488
2806	GRENADA LAKE	50 (2)	25 (1)	25 (1)	100 (4)	38 (1)	25 (1)	263

LAKES RANKED BY INDEX NOS.

RANK	LAKE CODE	LAKE NAME	INDEX NO
1	2805	SARDIS LAKE	488
2	2804	ROSS BARNETT RESERVOI	450
3	2806	GRENADA LAKE	263
4	2802	ENID LAKE	251
5	2801	ARKABUTLA LAKE	50

APPENDIX B

CONVERSION FACTORS

CONVERSION FACTORS

Hectares x 2.471 = acres

Kilometers x 0.6214 = miles

Meters x 3.281 = feet

Cubic meters x 8.107×10^{-4} = acre/feet

Square kilometers x 0.3861 = square miles

Cubic meters/sec x 35.315 = cubic feet/sec

Centimeters x 0.3937 = inches

Kilograms x 2.205 = pounds

Kilograms/square kilometer x 5.711 = lbs/square mile

APPENDIX C

TRIBUTARY FLOW DATA

TRIBUTARY FLOW INFORMATION FOR MISSISSIPPI 02/18/76

LAKE CODE 2805 SARDIS LAKE

TOTAL DRAINAGE AREA OF LAKE(SQ KM) 4001.5

TRIBUTARY	SUB-DRAINAGE AREA(SQ KM)	NORMALIZED FLOWS(CMS) JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
2805A1	4001.5	52.44	56.83	57.96	57.14	66.01	86.85	87.67	82.74	64.42	51.56	30.61	44.40	61.61
2805A2	3162.4	90.33	118.08	116.10	91.75	45.87	24.24	21.69	10.31	11.10	6.23	37.66	57.48	52.16
2805B1	23.8	0.16	0.37	0.31	0.37	0.14	0.01	0.02	0.0	0.00	0.0	0.03	0.10	0.12
2805C1	11.9	0.08	0.18	0.15	0.17	0.08	0.01	0.02	0.00	0.01	0.00	0.02	0.06	0.07
2805D1	51.0	0.68	1.10	1.02	1.10	0.62	0.16	0.24	0.05	0.11	0.04	0.27	0.54	0.49
2805E1	78.0	1.27	1.78	1.67	1.76	1.27	0.74	0.88	0.54	0.68	0.48	0.91	1.19	1.09
2805F1	72.0	1.08	1.56	1.44	1.53	1.05	0.54	0.62	0.37	0.48	0.31	0.68	0.93	0.88
2805G1	131.6	1.50	2.41	2.18	2.35	1.44	0.65	0.79	0.40	0.57	0.34	0.88	1.30	1.23
2805H1	109.8	1.87	2.52	2.38	2.49	1.84	1.16	1.30	0.85	1.05	0.79	1.36	1.73	1.61
2805J1	24.5	0.22	0.40	0.34	0.37	0.21	0.08	0.10	0.04	0.07	0.03	0.11	0.18	0.18
2805ZZ	328.9	8.78	11.58	11.33	9.17	4.73	2.49	2.32	1.13	1.27	0.74	3.79	0.57	4.78

SUMMARY

TOTAL DRAINAGE AREA OF LAKE = 4001.5
SUM OF SUB-DRAINAGE AREAS = 3993.8

TOTAL FLOW IN = 757.01
TOTAL FLOW OUT = 738.64

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
2805A1	8	73	120.04	21	123.18				
	9	73	130.12	26	137.34				
	11	73	106.19	2	134.51				
	12	73	115.36	19	155.74				
	2	74	139.15	8	152.91				
	3	74	168.06	18	171.32				
	4	74	129.55	11	150.08				
	5	74	43.95	18	0.0				
2805A2	8	73	5.92	22	3.23				
	9	73	2.89	28	2.10				
	11	73	153.76	2	4.59				
	12	73	136.77	19	10.25				
	2	74	115.53	8	42.19				
	3	74	63.71	18	19.85				
	4	74	56.07	11	24.64				
	5	74	147.81	18	87.50				
2805B1	8	73	0.02	21	0.0				
	9	73	0.00	26	0.00				
	11	73	1.16	2	0.00				
	12	73	0.14	19	0.01				
	2	74	0.62	8	0.07				
	3	74	0.04	18	0.03				
	4	74	0.25	11	0.01				

TRIBUTARY FLOW INFORMATION FOR MISSISSIPPI 02/18/76

LAKE CODE 2805 SARDIS LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
2805C1	8	73	0.02	21	0.00				
	9	73	0.00	26	0.01				
	11	73	0.57	2	0.01				
	12	73	0.08	18	0.01				
	2	74	0.31	8	0.05				
	3	74	0.04	18	0.03				
	4	74	0.12	11	0.02				
	5	74	0.76	18	0.34				
2805D1	8	73	0.24	21	0.06				
	9	73	0.07	26	0.09				
	11	73	2.55	2	0.12				
	12	73	0.62	19	0.22				
	2	74	1.53	8	0.45				
	3	74	0.40	18	0.28				
	4	74	0.88	11	0.22				
	5	74	3.34	18	1.61				
2805E1	8	73	0.88	21	0.57				
	9	73	0.59	26	0.62				
	11	73	3.91	2	0.65				
	12	73	1.25	19	0.85				
	2	74	2.38	8	1.08				
	3	74	0.99	18	0.91				
	4	74	1.53	11	0.85				
	5	74	5.04	18	2.44				
2805F1	8	73	0.65	22	0.40				
	9	73	0.40	26	0.45				
	11	73	3.60	2	0.48				
	1	74	5.04	2	0.71	29	2.89		
	3	74	0.79	8	0.71	29	1.22		
	5	74	4.67	2	3.26				
2805G1	8	73	0.79	22	0.42				
	9	73	0.45	26	0.51				
	11	73	6.54	2	0.54				
	1	74	9.43	2	0.88	29	5.01		
	3	74	1.02	8	0.85	29	1.78		
	5	74	8.69	2	5.80				
2805H1	8	73	1.30	22	0.91				
	9	73	0.93	25	0.96				
	11	73	5.52	2	1.05				
	1	74	7.70	2	1.39	29	4.36		
	3	74	1.50	8	1.39	29	2.07		
	5	74	7.11	2	4.93				

TRIBUTARY FLOW INFORMATION FOR MISSISSIPPI 02/18/76

LAKE CODE 2805 SARDIS LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS(CMS)

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
2805J1	8	73	0.10	22	0.05				
	9	73	0.05	25	0.06				
	11	73	1.22	2	0.07				
	1	74	1.73	2	0.11				
	3	74	0.14	8	0.11	29	0.26		
	5	74	1.59	2	1.08				
2805ZZ	8	73	0.88	21	0.51				
	9	73	0.48	26	0.42				
	11	73	16.03	2	0.68				
	12	73	13.76	19	1.13				
	1	74	23.28	2	3.11	29	12.88		
	2	74	11.89	8	4.33				
	3	74	6.20	8	2.38	18	2.18	29	16.17
	4	74	5.80	11	2.55				
	5	74	21.49	2	14.70	18	9.06		

APPENDIX D

PHYSICAL and CHEMICAL DATA

STORET RETRIEVAL DATE 76/02/18

280501
34 24 30.0 089 47 35.0 3
SARDIS LAKE
28107 MISSISSIPPI

11EPALES 2111202
0056 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/13	09 35	0000	26.7		18	50	8.00J	15	0.130	0.600	0.150	0.075
	09 35	0006	25.7	6.8		54	7.80J	13	0.120	0.500	0.160	0.019
	09 35	0015	23.2	6.0		55	7.60J	24	0.120	0.300	0.230	0.008
	09 35	0030	19.1	4.8		55	7.20J	21	0.120	0.300	0.290	0.010
	09 35	0042	18.3	3.2		54	7.10J	22	0.140	0.300	0.300	0.011
	09 35	0055	16.5	2.6		56	7.00J	20	0.140	0.300	0.340	0.014
73/08/27	15 10	0000	30.1	7.2	78	70	6.50	17	0.070	0.800	0.040	0.018
	15 10	0005	29.4			66						
	15 10	0015	28.0	1.8		63	6.70	14	0.050	0.400	0.050	0.008
	15 10	0030	22.0	0.2		79	6.40	21	0.200	0.600	0.100	0.010
	15 10	0046	18.1	0.4		66	6.50	22	0.200	0.600	0.060	0.012
73/11/01	12 05	0000	18.9		67	61	8.00	27	0.150	0.400	0.040	0.007
	12 05	0005	18.9	6.4		61	7.90	27	0.150	0.300	0.040	0.009
	12 05	0015	18.8	6.2		62	7.90	29	0.140	0.400	0.040	0.007
	12 05	0037	18.6	6.6		62	7.90	25	0.140	0.400	0.040	0.008

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/13	09 35	0000	0.078	7.0
	09 35	0006	0.067	
	09 35	0015	0.070	
	09 35	0030	0.076	
	09 35	0042	0.080	
	09 35	0055	0.090	
73/08/27	15 10	0000	0.019	6.3
	15 10	0015	0.019	
	15 10	0030	0.031	
	15 10	0046	0.064	
73/11/01	12 05	0000	0.019	1.9
	12 05	0005	0.020	
	12 05	0015	0.019	
	12 05	0037	0.028	

J VALUE KNOWN TO BE IN ERROR

STORET RETRIEVAL DATE 76/02/18

280502
34 25 22.0 089 45 35.0 3
SARDIS LAKE
28107 MISSISSIPPI

11EPALES 2111202
0042 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/13	10 30	0000	28.2		18	50	8.10J	15	0.130	0.500	0.120	0.009
	10 30	0006	27.0	7.4		52	7.90J	15	0.080	0.400	0.130	0.004
	10 30	0015	23.5	6.6		54	7.60J	16	0.090	0.300	0.210	0.006
	10 30	0027	19.5	3.8		58	7.30J	16	0.110	0.300	0.270	0.010
	10 30	0038	18.6	3.0		57	7.00J	17	0.150	0.400	0.310	0.014
73/08/27	15 55	0000	30.1	7.8	90	69	6.80	18	0.030	0.800	0.020	0.007
	15 55	0005	29.7			65						
	15 55	0015	28.1	1.0		64	6.60	16	0.030	0.400	0.020	0.004
	15 55	0035	20.0	0.4		73	6.40	25	0.260	0.700	0.090	0.008
	15 55	0048	18.1	2.8		67	6.40	24	0.250	0.600	0.110	0.010
73/11/01	11 49	0000	18.9		54	61	7.80	23	0.130	0.400	0.040	0.010
	11 49	0005	18.9	7.4		61	7.80	22	0.130	0.300	0.040	0.007
	11 49	0015	18.8	7.2		60	8.10	24	0.130	0.300	0.040	0.007
	11 49	0030	18.7	7.2		60	8.20	25	0.130	0.300	0.040	0.008

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/13	10 30	0000	0.065	12.7
	10 30	0006	0.062	
	10 30	0015	0.068	
	10 30	0027	0.072	
	10 30	0038	0.074	
73/08/27	15 55	0000	0.014	4.2
	15 55	0015	0.015	
	15 55	0035	0.041	
	15 55	0048	0.059	
73/11/01	11 49	0000	0.021	2.9
	11 49	0005	0.023	
	11 49	0015	0.020	
	11 49	0030	0.033	

J VALUE KNOWN TO BE IN ERROR

STORET RETRIEVAL DATE 76/02/18

280503
34 26 25.0 089 43 30.0 3
SARDIS LAKE
28107 MISSISSIPPI

11EPALES 2111202
0050 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/13	13 45	0000	28.2									
	13 45	0006	26.2	6.8	18	52	8.30J	15	0.100	0.500	0.100	0.006
	13 45	0015	23.4	6.4		51	8.00J	16	0.080	0.400	0.150	0.005
	13 45	0030	18.9	2.3		53	7.60J	14	0.080	0.400	0.200	0.007
	13 45	0046	16.4	2.8		61	7.20J	18	0.130	0.400	0.230	0.009
73/08/27	16 25	0000	29.9	7.4		57	7.40J	15	0.100	0.400	0.340	0.014
	16 25	0005	28.8		92	67	6.70	20	0.020	0.500	0.030	0.007
	16 25	0015	27.5	1.0		64						
	16 25	0030	21.1	0.4		62	6.60	19	0.040	0.400	0.030	0.009
	16 25	0041	18.7	1.8		79	6.20	27	0.240	0.700	0.080	0.016
73/11/01	11 29	0000	18.5			75	6.30	28	0.270	0.800	0.080	0.012
	11 29	0005	18.5	7.8	49	58	8.00	21	0.090	0.500	0.040	0.009
	11 29	0015	18.5	7.8		58	8.00	21	0.080	0.300	0.040	0.008
	11 29	0030	18.4	7.6		58	7.90	21	0.080	0.200K	0.040	0.007
						62	7.90	21	0.100	0.300	0.040	0.013

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/13	13 45	0000	0.061	7.5
	13 45	0006	0.003	
	13 45	0015	0.069	
	13 45	0030	0.073	
	13 45	0046	0.086	
73/08/27	16 25	0000	0.016	4.2
	16 25	0015	0.016	
	16 25	0030	0.042	
	16 25	0041	0.055	
73/11/01	11 29	0000	0.026	3.4
	11 29	0005	0.024	
	11 29	0015	0.029	
	11 29	0030	0.034	

* VALUE KNOWN TO BE LESS THAN INDICATED

J VALUE KNOWN TO BE IN ERROR

STORET RETRIEVAL DATE 76/02/18

268504
34 28 30.0 089 40 35.0 3
SARDIS LAKE
28071 MISSISSIPPI

11EPALES 2111202
0048 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00610 NH3-N TOTAL MG/L	00625 TOT KJEL N MG/L	00630 NO2&NO3 N-TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P
73/06/13	14 30	0000	29.4		18	52	8.50J	14	0.070	0.600	0.070	0.005
	14 30	0006	26.0	6.8		51	8.00J	13	0.080	0.500	0.110	0.008
	14 30	0015	23.8	4.0		52	7.20J	13	0.120	0.400	0.200	0.011
	14 30	0030	18.2	1.2		62	7.20J	19	0.150	0.400	0.210	0.008
	14 30	0044	16.7	2.8		55	7.30J	14	0.100	0.300	0.340	0.009
73/08/27	16 55	0000	30.3	7.8	85	69	6.50	22	0.050	0.600	0.050	0.005
	16 55	0006	29.2	5.4		65	6.00	14	0.040	0.500	0.050	0.008
	16 55	0020	26.0	2.8		65	6.30	19	0.050	0.500	0.040	0.005
	16 55	0031	20.4	1.4		80	6.20	27	0.300	0.800	0.110	0.009
73/11/01	11 13	0000	18.0		48	62	7.50	24	0.060	0.400	0.030	0.012
	11 13	0005	18.0	8.4		63	8.30	22	0.050	0.200K	0.030	0.009
	11 13	0015	17.8	7.8		63	8.20	22	0.050	0.200K	0.030	0.008
	11 13	0025	17.7	7.8		64	8.00	22	0.060	0.200K	0.030	0.010

DATE FROM TO	TIME OF DAY	DEPTH FEET	00665 PHOS-TOT MG/L P	32217 CHLRPHYL A UG/L
73/06/13	14 30	0000	0.063	10.4
	14 30	0006	0.065	
	14 30	0015	0.069	
	14 30	0030	0.076	
	14 30	0044	0.087	
73/08/27	16 55	0000	0.017	5.0
	16 55	0006	0.014	
	16 55	0020	0.020	
	16 55	0031	0.044	
73/11/01	11 13	0000	0.040	11.6
	11 13	0005	0.037	
	11 13	0015	0.035	
	11 13	0025	0.049	

K VALUE KNOWN TO BE LESS THAN INDICATED

J VALUE KNOWN TO BE IN ERROR

APPENDIX E

TRIBUTARY and WASTEWATER TREATMENT PLANT DATA

STORET RETRIEVAL DATE 76/02/23

2805A1
34 24 00.0 089 47 25.0 4
LITTLE TALLAHATCHIE RIVER
28121 15 SARDIS
O/SARDIS LAKE
SAMPLE OUTLET WHERE ACCES AT SE END LAKE
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/08/21	18 05		0.026	0.690	0.054	0.015	0.030
73/09/26	09 15		0.010K	1.500	0.060	0.005K	
73/11/02	11 20		0.017	0.350	0.100		0.020
73/12/19	11 20		0.080	0.300	0.050	0.025	0.050
74/02/08	09 05		0.152	0.400	0.060	0.025	0.095
74/03/18	10 45		0.092	1.500	0.070	0.020	0.120
74/04/11	09 50		0.200	1.500	0.050	0.025	0.040
74/05/18	09 30		1.600	1.200	0.140	0.025	0.075

K VALUE KNOWN TO BE LESS THAN INDICATED

31

STORET RETRIEVAL DATE 76/02/23

2805A2
34 32 20.0 089 34 40.0 4
LITTLE TALLAHATCHIE RIVER
28 15 TYRO
I/SARDIS LAKE
FROM RD OR BANK 2 MI SE OF BLACKWATER
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/08/22	11 30		0.021	1.150	0.031	0.012	0.050
73/09/26	10 50		0.010K	1.450	0.294	0.005K	
73/11/02	09 05		0.010K	0.550	0.025		0.095
73/12/19	10 05		0.132	0.400	0.070	0.030	0.090
74/02/08	10 30		0.124	0.600	0.065	0.020	0.085
74/04/11	11 10		0.040	0.600	0.045	0.010	0.050
74/05/18	14 00		0.156	0.400	0.040	0.005	0.065

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 76/02/23

2805C1
34 29 15.0 089 43 45.0 4
LITTLE GREASY CREEK
28 15 OXFORD
T/SARDIS LAKE
BRDG WHERE RD BRDG X IT 2.5 MI N OF RES
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/08/21	15 35		0.037	0.100K	0.054	0.016	0.035
73/09/26	10 15		0.017	3.700	2.000	0.005K	0.075
73/11/02	08 30		0.010K	0.550	0.024		0.055
73/12/18	09 15		0.044	0.100K	0.035	0.010	0.020
74/02/08	09 45		0.152	0.500	0.045	0.010	0.015
74/03/18	09 45		0.020	0.700	0.045	0.010	0.020
74/04/11	10 20		0.016	0.400	0.045	0.010	0.010
74/05/18	10 05		0.152	0.300	0.055	0.010	0.020

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 76/02/23

280501
34 30 30.0 089 43 01.0 4
GREASY CREEK
28 15 OXFORD
T/SARDIS LAKE
MASSEY RD BRDG 1.5 MI SE OF GLENVILLE
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/08/21	15 55		0.450	0.710	0.035	0.015	0.030
73/09/26	10 25		0.520	0.250	0.036	0.005K	0.040
73/11/02	08 45		0.465	0.150	0.024		0.025
73/12/19	09 25		0.672	0.100K	0.025	0.015	0.015
74/02/08	10 00		0.820	0.400	0.035	0.010	0.020
74/03/18	10 00		0.800	0.200	0.025	0.005	0.015
74/04/11	10 40		0.590	0.400	0.050	0.010	0.010

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/02/23

2805E1
34 33 00.0 089 36 00.0 4
BLACKWATER CREEK
28 15 TYRO
T/SARDIS LAKE
BRDG IN TOWN OF BLACKWATER
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/08/21	16 20		0.132	0.540	0.100	0.018	0.060
73/09/26	10 40		0.154	2.000	0.650	0.011	0.060
73/11/02	09 00		0.130	0.100K	0.036		0.035
73/12/19	09 50		0.192	0.100	0.030	0.015	0.020
74/02/08	10 15		0.184	2.200	0.080	0.010	0.020
74/03/18	10 30		0.132	1.200	0.035	0.010	0.030
74/04/11	10 55		0.120	0.600	0.030	0.010	0.010
74/05/18	10 45		0.208	0.484	0.090	0.015	0.035

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 76/02/23

2805F1
34 28 58.0 089 35 00.0 4
HURRICANE CREEK
28 15 OXFORD
T/SARDIS LAKE
RD BRDG 4.5 MI N OF COLLEGE HILL
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/08/22	09 10		0.310	0.600	0.100	0.018	0.045
73/09/26	13 15		0.600	3.900	1.370	0.014	0.065
73/11/02	10 00		0.300	1.300	0.220		0.035
74/01/02	10 43		0.288	0.600	0.065	0.015	0.030
74/03/08	09 30		0.270	0.700	0.035	0.015	0.060
74/03/29	09 45		0.224	1.300	0.090	0.015	0.045

STORET RETRIEVAL DATE 76/02/23

2805G1
34 25 30.0 089 36 56.0 4
TOBY TUBBY CREEK
28 15 OXFORD
T/SARDIS LAKE
BANK BELO CONFLU OF BRANCHES OF CREEK
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/08/22	09 35		0.378	0.880	0.040	0.044	0.105
73/09/26	13 30		0.430	0.150	0.029	0.046	0.100
73/11/02	10 20		0.420	2.500	0.490		0.090
74/01/02	11 10		0.470	0.300	0.100	0.035	0.080
74/01/29	10 50		1.260	0.350	0.050	0.045	0.130
74/03/08	09 50		0.440	0.800	0.035	0.050	0.130
74/03/29	09 55		0.252	1.500	0.125	0.095	0.400
74/05/02	12 00		0.352	1.300	0.210	0.075	0.280

STORET RETRIEVAL DATE 76/02/23

2805H1
34 22 18.0 089 40 36.0 4
CLEAR CREEK
28 15 OXFORD
T/SARDIS LAKE
ST HWY 6 BRDG 7.5 MI W OF OXFORD
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/08/22	09 35		0.300	0.960	0.048	0.014	0.025
73/09/25	13 55		0.260	0.150	0.019	0.006	0.040
73/11/02	11 00		0.250	0.600	0.020		0.024
74/01/02	11 25		0.410	2.000	0.075	0.010	0.025
74/01/29	11 10		0.620	1.500	0.065	0.020	0.045
74/03/08	10 05		0.400	0.300	0.060	0.010	0.045
74/03/29	10 15		0.370	0.900	0.200	0.040	0.165
74/05/02	13 00		0.184	1.100	0.070	0.035	0.195

STORET RETRIEVAL DATE 76/02/23

2805J1
34 21 15.0 089 40 35.0 4
HUDSON CREEK
28 15 OXFORD
T/SARDIS LAKE
ST HWY 6 BRDG 8.5 MI W OF OXFORD
11EPALES 2111204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
73/08/22	10 30		0.220	0.190	0.044	0.012	0.015
73/09/25	14 05		0.294	1.500	0.240	0.007	0.035
73/11/02	11 05		0.252	0.250	0.028		0.020
74/01/02	11 20		0.312	0.700	0.125	0.010	0.045
	11 30		0.360	3.600	0.930	0.010	0.030
74/03/08	10 15		0.390	1.100	0.050	0.010	0.050
74/03/29	10 25		0.216	0.900	0.065	0.025	0.135
74/05/02	12 35		0.184	1.000	0.052	0.045	0.185

STORET RETRIEVAL DATE 76/02/18

2805GA TF2805GA P004000
34 22 30.0 089 32 00.0 4
OXFORD
28121 7.5 OXFORD
T/SARDIS LAKE
TOBY TUBBY CREEK
11EPALES 2141204
0000 FEET DEPTH CLASS 00

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/05/10	08 30		0.870	17.600	9.000	5.880	7.000		
73/06/11	09 00		0.200	16.000	9.250	6.200	7.200		
73/07/10	08 45		0.150	15.400	8.000	6.200	6.700		
73/08/13	08 45		3.000	14.000	4.900	2.900	6.100		
73/09/12	09 00		3.120	14.900	6.700	4.700	6.500	0.500	0.500
73/10/12			9.300	4.550	4.200	4.900	5.250	0.500	
73/11/12	09 00		3.200	20.000	9.300	5.500	7.400	0.500	
73/12/06	09 30		0.540	17.500	8.800	4.100	5.400		
74/01/17	13 00		0.080	16.000	7.400	4.850	7.100		
74/02/08	07 45		0.680	13.000	7.200	4.300	5.300		
74/03/08	09 50		1.160	17.000	8.400	5.600	7.800		
74/04/17	10 00		0.880	16.000	10.000	3.900	5.000		
74/05/08	08 00		0.040	35.000	12.000	7.200	11.800		

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